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EXAMINER

SEKUL, MARIA LYNN

ART UNIT

PAPER NUMBER

2461

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PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/577,683	Applicant(s) LINDEMANN ET AL.	
	Examiner MARIA L. SEKUL	Art Unit 2461	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 08 Feb 2007.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-30 is/are pending in the application.
- 4a) Of the above claim(s) 1-18 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☐ Claim(s) 19-30 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 31 July 2009 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Status of Claims

1. **Claims 1-18** have been cancelled. **Claims 19-30** have been added and are now pending. Applicant indicates that claims 19 and 21-26 are identical to canceled claims 11-18 except for the numbering. This Examiner has noted that the language of claims 19 and 21-26 is identical to previously presented claims 11-17. However, Applicant has added a new claim 20, depending from claim 19, and from which 21-26 depend. As such, claims 21-26 are also new claims. Only claim 19 is treated as an existing claim.

Response to Arguments

2. Applicant's arguments filed July 31, 2009, have been fully considered but they are not persuasive.

3. As to **claim 19**, Applicant states the combination of O'Toole and Zhang does not render new claim 19 obvious because the combination does not disclose or suggest a monitor that sends "a message indicative of non-usage to the connection controller". Applicant further states the rejection of claim 11 (now claim 19) relies upon idle connection reduction device 135 in FIGURE 1 of O'Toole as corresponding to the claimed connection controller and appears to rely upon idle connection handling process 220 in FIGURE 2 of O'Toole as corresponding to the claimed monitor. Applicant further states that as illustrated in FIGURES 1 and 2 of O'Toole (reproduced below), idle connection handling process 220 is a component of idle connection reduction device 135, and that O'Toole does not, however, disclose or suggest that idle connection handling process 220 sends "a message indicative of non-usage to" idle connection

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reduction device 135, i.e., idle connection reduction device 135 does not send a message to itself. Applicant further states that instead, O'Toole discloses that the monitoring and dropping of the connections is handled entirely within idle connection handling process 220, and to be sure, O'Toole discloses that idle connection handling process 220: • monitors the connections 140 to detect an idle drop condition; operates using an idle connection drop policy 212 based on idle connection metrics 235 to decide which connections to drop when a server 130 develops the condition to drop idle connections; and • selectively drops idle connections according to the idle connection drop policy 212 according to the idle connection metrics.

Lastly, Applicant states that Zhang is cited for a network address translator (NAT), but does not remedy the above-identified deficiencies of O'Toole, and accordingly, the combination of O'Toole and Zhang does not disclose or suggest a monitor that sends "a message indicative of non-usage to the connection controller", and therefore does not render claim 19 obvious.

In response to Applicant's arguments, O'Toole discloses an idle connection handling application and process, which when executing performs both the monitoring of the connections ("the monitor") and the dropping of the connections ("connection controller") (**col. 7, lines 38-62**). **Fig. 3** shows a block diagram of the application with the Connection Monitor 300 and Connection Dropper 310 functions. Further, the different functions of the application and process, i.e. the monitoring function and the connection dropper function, communicate by signaling, i.e. sending messages, between the functions. For example, when the connection monitor detects an idle drop

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condition, it signals, i.e. sends a message, to the idle connection policy applier (**col. 8, lines 6-9**), and the connection dropper 310 selectively drops idle connections according to the idle connection drop policy 212 (**col. 9, lines 36-38**). As shown, the idle connection handling process does, in fact, send a message to itself when it sends messages between functions comprising the application.

Further, because O'Toole clearly discloses "a message indicative of non-usage to the connection controller", it is unnecessary to find support for the limitation by combining O'Toole and Zhang.

Examiner's Note: Examiner has cited particular columns and line numbers in the references applied to the claims above for the convenience of the applicant. Although the specified citations are representative of the teachings of the art and are applied to specific limitations within the individual claim, other passages and figures may apply as well. It is respectfully requested from the applicant in preparing responses, to fully consider the references in their entirety as potentially teaching all or part of the claimed invention, as well as the context of the passage as taught by the prior art or disclosed by the Examiner.

Claim Objections

4. **Claim 27** is objected to because of the following informalities: line 10, "the network controller" appears to refer back to "a connection controller" in line 5. If this is the case, please replace "the network controller" with - - - the connection controller - - - .

Additionally, claim 27 recites "controlling connection" in lines 1 and 5. This has been interpreted to be "controlling a connection". It is suggested to change the language for clarity.

Claim Rejections - 35 USC § 112

1. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

2. **Claims 27 and 30** is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

As to **Claim 27**, the claim recites the limitation "the connections" in line 9. There is insufficient antecedent basis for this limitation in the claim.

As to **Claim 30**, the claim recites the limitation "the connection" in line 3. There is insufficient antecedent basis for this limitation in the claim.

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

1. **Claim 19-30** are rejected under 35 U.S.C. 103(a) as being unpatentable over **O'Toole, Jr. (US Patent 7,287,082)** (hereinafter O'Toole) in view of **Zhang et al. (US PGPub US2002/0002621)** (hereinafter Zhang).

As to **Claim 19**, O'Toole discloses an apparatus with
“a router and at least one connection controller, said connection controller controlling connections involving at least one of the terminals to another network said router, in use, routing data to and from terminals on a local area network” (O'Toole

discloses a router and a connection handling application called the idle connection reduction device, **Fig.1-2**); and

"a monitor for monitoring usage of a network address and for sending a message indicative of non-usage to the connection controller" (O'Toole describes a connection monitor that monitors connections that have been idle for a specified period of time and notifies the connection policy of the idle connection, **Fig. 2, col. 7, lines 18-28, 38-47**) and

"wherein the connection controller is responsive to receipt of the message to determine whether to release a connection to another network" (O'Toole describes a idle connection reduction which detects an idle drop condition, invokes a connection drop policy which selectively drops idle connections; **Fig. 2-4, col. 9, lines 39-54**).

O'Toole does not explicitly disclose "a network address translation translator for translating addresses on incoming data to addresses of terminals on the local area network" and "the network address translator includes a table of network addresses".

The background of Zhang discloses a NAT for mapping between private to public network addresses (**¶ 15**), and maintaining a NAT table (**Fig. 5, ¶ 35, 37**). Zhang does not disclose "having associated use state data".

O'Toole discloses "having associated use state data" (O'Toole discloses collecting idle connection metrics based on usage, for instance, an idle timer for connections (**col. 7, lines 44-47**).

O'Toole and Zhang are analogous art because they are both related to establishing network connections for routing data.

At the time of the invention it would have been obvious to a person of ordinary skill in the art to combine connection monitoring functions in O'Toole with the NAT described in Zhang. The NAT device allocates network resources, i.e. public network addresses; and the monitoring function monitors network resources. The motivation for using the idle monitoring function as taught by O'Toole with the NAT in Zhang being that the NAT tracks connections to public network addresses and the monitor provides a way to track idle NAT connections which may then be released. As such, it would have been obvious to one skilled in the art at the time the invention was made to also combine these functions into one apparatus.

As to **claims 20, 28 and 30**, O'Toole in view of Zhang discloses claims 19, 27 and 29, respectively.

Zhang further discloses "the connection to the another network supports a plurality of terminals on the local area network" (computers 86a and 86b are coupled to hub 88 then through modem 90 to gateway 82 to connect the computers to multiple networks ("connection to the another network"), that is, there is one PPP connection between gateway 182 and modem 90 serving the multiple users 86a and 86b **Figs. 3, 5 and 6; ¶ 32, 36-38**); and

the connection controller releasing the connection terminates the connection for all of the plurality of terminals to the another network" (a connection inherently connects two or more objects; so when releasing a connection, especially when forcing a release of the connection, whether because the connection is idle or for other reasons, it would be obvious to one skilled in the art to release all related parties and/or segments to the

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connection within the control of the connection controller. In Zhang, because the connection is between the gateway 182 and the multiple computers 86a and 86b, it would be obvious to one skilled in the art at the time the invention was made that the Idle Connection Handling Application as taught in O'Toole, when terminating a connection, would terminate the connection to the network and to the computers 86a and 86b which are part of the connection identified for release).

Claim 21 discloses all of claim 20 and “wherein the monitor is an IP router” (O'Toole further discloses that the idle connection reduction device monitors a set of connections, and can be implemented on any device having connections including the network router; **Fig. 1-2; col. 6, lines 14-19, 53-55**).

Claim 22 discloses all of claim 21 and “wherein the connection operates in accordance with a point to point protocol (PPP)”.

Zhang further discloses a router implementing a protocol stack using IP over a filter function, which filter function may be PPP (**Fig.2**). It would have been obvious to one skilled in the art at the time the invention was made to create connections using PPP as taught in Zhang with the connection control feature of O'Toole being that PPP creates a point-to-point connection that can be monitored.

Zhang also teaches “and at least one additional protocol” (Zhang teaches that another session by a user does not have to use PPP but may use any network protocol; ¶ 35).

Claim 23 discloses all of the apparatus of Claim 22 and “wherein the at least one additional protocol is one of a point to point tunneling protocol (PPTP) or a point to

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point protocol over Ethernet (PPPoE)". The PPPoE protocol was designed for transmitting PPP over Ethernet. It would have been obvious to one skilled in the art at the time the invention was made to implement PPP over PPPoE if the network also implemented Ethernet.

Claim 24 discloses all of the apparatus of claim 20 and "wherein the connection controller is an entity on the router". O'Toole teaches the idle connection reduction device which controls the connections could be implemented in any computerized device including the router. (**col. 6, lines 52-55**).

Claim 25 discloses all of the apparatus of claim 24 and "wherein the at least one connection controller is a software object" (O'Toole discloses the software programs perform the idle connection reduction device, **col. 13, lines 28-36**).

Claim 26 discloses all of the apparatus of claim 25 and "wherein a plurality of respective connection controllers is provided, each controlling a respective connection" (O'Toole discloses the software programs perform the idle connection reduction device, and it would have been obvious to one skilled in the art to have an idle connection handling process, or instance of a process, for each connection, **col. 13, lines 28-36**).

As to **Claim 27**, Zhang discloses:

"providing a router connected by an interface to ports for applications running on terminals on the LAN" (**Figs. 3, 5; ¶ 15, 32, 36**); and

"recording the use of a port in a network address translator table" (the background of Zhang discloses a NAT for mapping between private to public network addresses (**¶ 15**), and maintaining a NAT table (**Fig. 5, ¶ 35, 37**).

Zhang does not explicitly disclose the other elements of the instant claim.

O'Toole discloses "providing a connection controller for controlling connection between the router and the another network" (O'Toole discloses a connection handling application called the idle connection reduction device, **Fig.1-2**);

"monitoring use of the interface to the ports" (O'Toole discloses a connection monitor, **Fig. 3**).

O'Toole further discloses "when the interface is unused for the connections to the ports, the monitor sends a message to the network controller to break the connection between the router and the another network". O'Toole discloses an idle connection handling application which monitors use of connections and release connection that are idle for a certain period of time (**Figs. 1-2, 4**).

As stated previously, Zhang and O'Toole are analogous art because they deal with establishing connections and routing data through a network. O'Toole teaches that an idle connection metric for each idle connection is maintained (**Fig. 4**). The NAT table that provides the mapping between private and public addresses in Zhang tracks a connection between the terminal and the other network. It would have been obvious to one skilled in the art at the time the invention was made to use the idle connection management function in O'Toole with the NAT connection table in Zhang as it provides a way to detect idle connections at the NAT level that should be released for re-use.

Claim 29 discloses a router comprising:

a connection controller (O'Toole discloses a router and a connection handling application called the idle connection reduction device, **Fig.1-2**); and

a monitor coupled to the connection controller, (O'Toole describes a connection monitor that monitors connections that have been idle for a specified period of time and notifies the connection policy of the idle connection, **Fig. 2, col. 7, lines 18-28, 38-47**);

wherein the router is coupled by a first connection to another network (router 115 is connected to the network 110, **Fig. 1**),

wherein the monitor monitors usage of a network address and sends a message indicative of non-usage to the connection controller (O'Toole describes a connection monitor that monitors connections that have been idle for a specified period of time and notifies the connection policy of the idle connection, **Fig. 2, col. 7, lines 18-28, 38-47**), and

wherein the connection controller is responsive to receipt of the message to determine whether to release the first connection to the another network (O'Toole describes a idle connection reduction which detects an idle drop condition, invokes a connection drop policy which selectively drops idle connections; **Fig. 2-4, col. 9, lines 39-54**).

O'Toole does not explicitly disclose "wherein the router is respectively coupled by a plurality of connections to a plurality of terminals on a local area network", and "the monitor comprising a network address translator".

Zhang discloses computers 86a and 86b ("terminals on a local area network") are coupled to hub 88 then through modem 90 to gateway 82 ("router") to connect the computers to multiple networks, that is, there is one PPP connection between gateway 182 and modem 90 serving the multiple users 86a and 86b (**Figs. 3, 5 and 6; ¶ 32, 36-**

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38). The background of Zhang discloses a NAT for mapping between private to public network addresses (**¶ 15**), and maintaining a NAT table (**Fig. 5, ¶ 35, 37**).

Zhang and O'Toole are analogous in the art because they pertain to establishing network connections for routing data. At the time of the invention it would have been obvious to a person of ordinary skill in the art to combine connection monitoring functions in O'Toole with the NAT described in Zhang. The NAT device allocates network resources, i.e. public network addresses; and the monitoring function monitors network resources. The motivation for using the idle monitoring function as taught by O'Toole with the NAT in Zhang being that the NAT tracks connections to public network addresses and the monitor provides a way to track idle NAT connections which may then be released. As such, it would have been obvious to one skilled in the art at the time the invention was made to also combine these functions into one apparatus.

Conclusion

1. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any

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extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to MARIA L. SEKUL whose telephone number is (571)270-7636. The examiner can normally be reached on Monday - Friday 9:00-5:30 EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Huy Vu can be reached on (571) 272-3155. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

MARIA L. SEKUL
Examiner
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